

WHAT IS CLAIMED IS:

1. A program modification database for providing substitute program segments for particular identified programs, the database comprising:

a set of substitute program segments;

5 a set of program entries specifying correction information for such particular identified programs, wherein individual ones of the set of program entries comprise:

a program matching criteria, and

a reference to at least one substitute program segment in the set of substitute program segments; and

10 an index including a set of identifiers, wherein each identifier corresponds to one of the set of program entries.

2. The program modification database of claim 1 wherein ones of the set of identifiers comprise text strings corresponding to at least a portion of a program name.

15 3. The program modification database of claim 1 further comprising a preliminary search function for comparing ones of the set of identifiers to corresponding information for a program to identify potential matching entries in the set of program entries.

20 4. The program modification database of claim 3 wherein the corresponding information comprises at least a portion of a program name.

5. The program modification database of claim 1 wherein the set of substitute program segments includes a program interface.

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6. The program modification database of claim 1 wherein individual ones of the set of program entries include a program name.

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7. The program modification database of claim 6 wherein the programming matching criteria includes at least one file metadata-based criterion.

8. The program modification database of claim 1 wherein the set of potential set of criterion types for specifying a particular program matching criteria is extensible.
9. The program modification database of claim 8 wherein programming matching criterion types are specified by XML tags.
10. The program modification database of claim 1 further comprising a library section specifying one or more program files, including one or more substitute program segments, to be loaded into a process space by a program loader when the operating system loads the computer program.
11. The program modification database of claim 1 further comprising one or more explicit exclude instructions having a reference to a calling module for which program segment substitution is not implemented.
12. The program modification database of claim 11 further comprising one or more explicit include instructions having a reference to a calling module for which a more general explicit exclude instruction is overridden, thereby enabling program segment substitution for the particular calling module.
13. The program modification database of claim 1 further comprising a search function for comparing matching criteria of the individual ones of the set of program entries to a program to identify a match.
14. The program modification database of claim 13 wherein the search function comprises procedures for executing a multi-tiered executable program matching scheme to locate a matching entry within the set of program entries for a particular program, the procedures comprising:
a first procedure executing a first search on an index having identifying information for each one of the set of program entries to identify a set of potential matching entries; and

a second procedure executing a second search on at least a portion of the set of potential matching entries to identify a program entry matching the particular program based upon the program matching criteria for the program entry.

- 5 15. The program modification database of claim 1 wherein the set of substitute program segments is stored in a read-only memory.
16. The program modification database of claim 1 wherein the set of program entries is stored in a read-only memory.
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17. The program modification database of claim 1 wherein the set of substitute program segments include substitute executable program interfaces.
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18. The program modification database of claim 1 wherein the set of substitute program segments include program patches.
19. The program modification database of claim 1 wherein the set of substitute program segments are stored in a common memory location referenced by differing ones of the set of program entries.
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20. A method for providing modification segments for a particular program at load time in a computer system including a program modification database having a set of program entries, and wherein each program entry includes a program matching criteria and a reference to at least one substitute program segment, the method comprising the steps of:

5 multi-tiered matching identification information for the particular program to a program matching criteria for an entry within the set of program entries, the multi-tiered matching step comprising the sub-steps of:

10 first executing a first search on an index having identifying information for each one of the set of program entries to identify a first set of potential matching entries; and

15 second executing a second search on at least a portion of the first set of potential matching entries to identify a program entry matching the particular program based upon the program matching criteria for the program entry;

15 accessing within the entry, in response to the matching step, a sub-field identifying substitute program segments for the particular program; and

providing memory location references for reading the identified substitute program segments based upon the accessing step.

20 21. The method of claim 20 wherein the identifying information comprises a limited number of characters corresponding to names of programs for which entries are present in the program modification database.

22. The method of claim 21 further comprising the step of:

25 comparing a full name of the particular program to an executable program name provided for each of the first set of potential matching entries comparison to render a second set of potential matching entries.

23. The method of claim 22 wherein the at least a portion of the first set of potential 30 matching entries corresponds to the second set of potential matching entries.

24. The method of claim 20 wherein the index is stored as a packed data structure.
25. The method of claim 20 wherein the program matching criteria includes comparing file metadata.
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26. The method of claim 20 wherein types of matching information for the program matching criteria are designated by XML tags.
27. The method of claim 20 wherein the set of potential types of matching information for the program matching criteria is extensible.
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28. A computer-readable medium having computer-executable instructions for providing modification segments for a particular program at load time in a computer system including a program modification database having a set of program entries, and wherein each program entry includes a program matching criteria and a reference to at least one substitute program segment, the computer-executable instructions facilitating performing the steps of:

5 multi-tiered matching identification information for the particular program to a program matching criteria for an entry within the set of program entries, the multi-tiered matching step comprising the sub-steps of:

10 first executing a first search on an index having identifying information for each one of the set of program entries to identify a first set of potential matching entries; and

15 second executing a second search on at least a portion of the first set of potential matching entries to identify a program entry matching the particular program based upon the program matching criteria for the program entry; accessing within the entry, in response to the matching step, a sub-field identifying substitute program segments for the particular program; and providing memory location references for reading the identified substitute program segments based upon the accessing step.

20 29. The computer-readable medium of claim 28 wherein the identifying information comprises a limited number of characters corresponding to names of programs for which entries are present in the program modification database.

25 30. The computer-readable medium of claim 29 further comprising computer-executable instructions facilitating performing the step of:

comparing a full name of the particular program to an executable program name provided for each of the first set of potential matching entries comparison to render a second set of potential matching entries.

31. The computer-readable medium of claim 30 wherein the at least a portion of the first set of potential matching entries corresponds to the second set of potential matching entries.
- 5 32. The computer-readable medium of claim 28 wherein the index is stored as a packed data structure.
33. The computer-readable medium of claim 28 wherein the program matching criteria includes comparing file metadata.
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34. The computer-readable medium of claim 28 wherein types of matching information for the program matching criteria are designated by XML tags.
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35. The computer-readable medium of claim 28 wherein the set of potential types of matching information for the program matching criteria is extensible.
36. Apparatus comprising the program modification database of claim 1.
37. Apparatus comprising the computer-readable medium of claim 28.
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